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MECHANICS.

246. Proposed by **A. M. HARDING**, Adjunct Professor, University of Arkansas, Fayetteville, Ark.

A pentagon *ABCDE*, formed of equal uniform heavy rods connected by smooth joints at their ends, is supported symmetrically in a vertical plane with A uppermost, and AB and AE in contact with two smooth pegs in the same horizontal line. Prove that if the pentagon is regular, the pegs must divide AB and AE each in the ratio $1+\sin(\pi/10):3\sin(\pi/10)$. Jeans' *Theoretical Mechanics*, page 112, number 13.

247. Proposed by **C. N. SCHMALL**, New York City.

A cylinder of height h and radius r is standing on a horizontal seat in a railway car while the train is getting under way with an acceleration f. Show that the cylinder will not be disturbed if

$$f<\mu g, \text{ and } f<2rg/h,$$

where μ is the coefficient of friction.

NUMBER THEORY AND DIOPHANTINE ANALYSIS.

171. Proposed by **PROFESSOR E. B. ESCOTT**, Ann Arbor, Mich.

Solve completely:

$$\begin{aligned} 2x^2-1&=y,\\ 2y^2-1&=z,\\ 2z^2-1&=w,\\ 2w^2-1&=x. \end{aligned}$$

172. Proposed by **H. C. FEEMSTER**, York, Neb.

Show that $\dfrac{(nr)!}{n!(r!)^n}$ is an integer.

173. Proposed by **V. M. SPUNAR**, M. and E. E., East Pittsburg, Pa.

Find integral values satisfying the equation,

$$a_1^2+a_2^2+a_3^2+\ldots+a_n^2=d^4.$$

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NOTES AND NEWS.

Professor L. E. Dickson, who has been abroad during the past six months, returns to residence at the University of Chicago for the Spring Quarter, beginning April first, 1910. S.

The twenty-sixth regular meeting of the Chicago Section of the American Mathematical Society will be held at the University of Chicago on Friday and Saturday, April 8, 9, 1910, at the Ryerson Physical Laboratory. Arrangements will be made for members present to dine together on Friday evening. S.

Professor H. B. Newson, of the University of Kansas, died suddenly at his home on February 18, at the age of fifty years. Professor Newson had held a full professorship since 1905 and would have succeeded to the headship of the department at the close of the present academic year. He was a graduate of Ohio Wesleyan University and had studied at Johns Hopkins, Heidelberg, and Leipsig. S.

At the annual meeting of the American Federation of teachers of the mathematical and physical sciences in Boston, during the Christmas recess, several important committees made preliminary reports, including the committee on a syllabus in geometry, the committee on college entrance requirements, and various committees under the International Commission on the teaching of mathematics. Two new committees were appointed, one to cooperate with the College Entrance examination board on the best form of logarithmic tables to be used in examinations, and one to consider the question of the publication of a journal devoted exclusively to secondary mathematics. Professor C. R. Mann, of the University of Chicago, was elected president for the ensuing year, and Professor E. R. Smith, of the Brooklyn Polytechnic Institute, secretary. S.

The series of articles which has been running for the past fourteen months in the *New York Independent*, on Great American Universities, was brought to a close in the March issue with a general article making some comparisons of great interest in respect to age, attendance, alumni, libraries, incomes, doctorates, etc. The author of the articles is Edwin E. Slosson, Ph. D. (Chicago). The *Independent* announces a similar series of articles in the near future on Great Foreign Universities. S.

W. B. Fite, assistant professor of mathematics in Cornell University, and H. E. Hawkes, assistant professor of mathematics in Yale University, were appointed full professors of mathematics in Columbia University. Professor C. J. Keyser has been given charge of the mathematical department of Columbia University, succeeding Dean Van Amringe, who retires from active service. M.

Professor Jules Molk, 8 Rue d' Alliance, Nancy, France, invites all mathematicians to mail to him corrections and additions to the published numbers of the great *Encyclopédie des Sciences Mathématiques*. Each volume is to contain "complements" on all the articles of the volume. It is also expected to include a comparative list of the principal technical terms used in the volume, in English, French, German, and Italian. The entire encyclopedia will probably fill more than thirty large volumes. Over 600 pages of the first volume and some parts of the following volumes have appeared. The work is published jointly by Gauthier-Villars of Paris, and B. G. Teubner of Leipzig. M.